

## REMARKS

1. Claims 1, 3-7, 9, 11-13 and 19 were rejected under 35 USC 103(a) as being unpatentable over Paton et al. (US 4,120,291) in view of Hayakawa et al. (US 5,575,291).
2. Applicant respectfully traverses the rejection of claims 1, 3-7, 9, 11-13 and 19 under 35 USC 103(a). The facts of the case make it clear that Examiner's rejection is based primarily on hindsight from Applicant's own patent application. Examiner is reminded that the motivation or suggestion to combine must come from the prior art and not from Applicant's own patent application. Examiner's attention is directed to *In re* Application of Philip A. Shaffer Jr., 229 F.2d 476:

It is too well settled for citation that references may be combined for the purpose of showing that a claim is unpatentable. However, they may not be combined indiscriminately, and to determine whether the combination of references is proper, the following criterion is often used: namely, whether the prior art suggests doing what an applicant has done. In *re* Fridolph, 134 F.2d 414, 30 C.C.P.A., Patents, 939; In *re* Dalzell, 152 F.2d 1013, 33 C.C.P.A., Patents, 808. Furthermore, when references are combined to negate patentability, it should also be considered whether one skilled in the art with the references before him could have made the combination of elements claimed without the exercise of invention. In *re* Goepfrich, 136 F.2d 918, 30 C.C.P.A., Patents, 1181. **The foregoing cases, in our opinion, stand for the proposition that it is not enough for a valid rejection to view the prior art in retrospect once an applicant's disclosure is known. The art applied should be viewed by itself to see if it fairly disclosed doing what an applicant has done. If the art did not do so, the references may have been improperly combined.**

There is no actual motivation or suggestion to combine in the cited references. Applicant therefore submits that the combination of Paton and Hayakawa would not be obvious to one of ordinary skill in the art. Furthermore, Applicant submits that such a combination would not even be desirable to one of ordinary skill in the art as the combination would be nonfunctional.

As previously pointed out to Examiner, one of ordinary skill in the art would recognize that the flexible plastic membrane 16 of Paton must possess a certain minimum tensile strength in order to effectively contain the fluid F within the fluid coupling. Whereas, the entire point of the Hayakawa patent is to provide an ultrasonic coupling made of a gel material that is so flexible that it will readily deform to fit the steep undulations of a body surface, even with very little force applied. This object of the invention is repeatedly emphasized in the Summary of the Invention and throughout the patent specification. The gel material, as it is described, is barely solid. In fact, it cannot even support its own weight without water oozing out of the gel material. This characteristic of the gel material makes it unsuitable for use as a substitute for the flexible plastic membrane 16 of Paton.

Examiner countered that these deficiencies only apply to an alternate embodiment and not to the preferred embodiment of Hayakawa. However, this is denying what is clearly stated in the Hayakawa patent at column 8, line 66 - column 9, line 3:

The gel material which forms the ultrasonic coupler 70 ***according to the present invention*** has a low PVA weight % and is slightly inferior in its water molecule holding capacity. Therefore, when pressure is applied to the gel material, water is apt to ooze out.

Examiner based the rejection in part on the statement by Hayakawa that the gel material has “a high tear strength” (column 8, lines 58-60). However, Hayakawa does not give any units of measure for this, but merely compares the gel material to examples 1, 3, 4 and 5, which are said to have “weak tear strength.” Comparative example 1, in fact, had such weak tear strength that it easily tore when an ultrasonic coupler made of this gel material was applied to and detached from a body surface. Therefore the statement cited by Examiner does not give any support to the contention that the gel material could be used as a substitute for the flexible plastic membrane 16 of Paton.

On the contrary, the Hayakawa reference contains strong evidence that the gel material of coupling member would not be suitable as a substitute for the flexible plastic

membrane 16 of Paton. The gel material of the ultrasonic coupling member in Hayakawa is described as having a hardness in the range of  $0.5 \times 10^4$  dyne/cm<sup>2</sup> to  $2 \times 10^4$  dyne/cm<sup>2</sup>. (See Abstract; column 3, lines 38-43; and column 4, lines 43-47.) The disclosed range of hardness is unacceptably low for use as a membrane material in the present invention, in part, because it indicates that the tensile strength is insufficient for use as a membrane material to enclose a fluid acoustic coupling medium, as required by the present claims. (Yield strength is proportional to hardness,  $H = 3 \sigma_y$ .)

Applicant previously likened this material to a dessert gelatin, but, in fact, this material is even softer than a typical dessert gelatin. The gel material of the ultrasonic coupling member in Hayakawa is even softer than mayonnaise, which has a hardness of approximately  $2.4 \times 10^4$  dyne/cm<sup>2</sup>. To illustrate this point applicant submits a copy of US Patent 5080911, marked as Exhibit A. Table 10, 4<sup>th</sup> sample, and Table 16, sample 5, show the hardness of ordinary, unmodified mayonnaise, which is significantly harder than the gel material of Hayakawa.

Imagine trying to create an ultrasound window to hold back fluid with a membrane made out of a material with the consistency (i.e. hardness and yield strength) softer than mayonnaise, that is what Examiner's proposed combination is suggesting.

For this reason, one of ordinary skill in the art will quickly recognize that the suggested combination of Paton and Hayakawa would be nonfunctional. Applicant directs Examiner's attention to MPEP § 2143.02, which states that a reasonable expectation of success is required for a finding of obviousness:

2143.02 Reasonable Expectation of Success Is Required [R-6]

>A rationale to support a conclusion that a claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art. KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_, \_\_\_, 82 USPQ2d 1385, 1395 (2007); Sakraida v. AG Pro, Inc., 425 U.S. 273, 282,

189 USPQ 449, 453 (1976); Anderson's-Black Rock, Inc. v. Pavement Salvage Co., 396 U.S. 57, 62-63, 163 USPQ 673, 675 (1969); Great Atlantic & P. Tea Co. v. Supermarket Equipment Corp., 340 U.S. 147, 152, 87 USPQ 303, 306 (1950).

Thus applicant submits that it would not be obvious to combine the Paton and Hayakawa references as suggested by the Examiner and, even if combined, the combination would not result in Applicant's claimed invention because the suggested combination would be nonfunctional. Examiner is respectfully requested to withdraw the rejection of claims 1, 3-7, 9, 11-13 and 19.

Regarding claim 3, Examiner points out that Hayakawa discloses a hydrogel material with less than **1 dB/cm/MHz** (column 1, lines 57-59). However, this is a different unit of measure than recited in claim 3, which states "said scan window is formed of a material with less than **1 dB/mm** signal loss of transmitted and received high frequency ultrasound at a frequency in a range of 50 to 100 MHz." Converting the signal loss in the Hayakawa disclosure to the same unit of measure, we can see that these values are not at all comparable:

<u>Frequency</u>	<u>Signal Loss</u> (one way)	<u>Signal Loss</u> (transmitted & received)
50 MHz	5 dB/mm	10 dB/mm
100 MHz	10 dB/mm	20 dB/mm

Hayakawa is therefore not enabling for a material with less than 1 dB/mm signal loss in the claimed frequency range. Examiner is respectfully requested to withdraw the rejection of claim 3.

Regarding claim 5, Examiner erroneously states that Hayakawa discloses a cross-linked hydrogel with a mesh support structure. The feature cited by Examiner (FIG. 3A, element 60A) is described by Hayakawa at column 8, lines 33-35: "The coupling member 60 is provided with **a plurality of holes 60a** through which the gel material is inserted." and further at column 8, lines 60-63: "Therefore, a strong coupling force is obtained by integrated formation, in which the gel material passed through **holes 60a**

*formed in the coupling member 60.”*

Further regarding claim 5, Applicant notes that Examiner did not enclose a copy of the American Heritage Dictionary, which she used as a reference for the definition of “mesh”, but only an excerpt that was liberally modified by taking the definitions out of context and rearranging the order in which they appear in the dictionary. An accurate copy of the American Heritage Dictionary with the full entry for the definitions of “mesh” is appended hereto as Exhibit B. The excerpts used by Examiner have been highlighted. It can be seen how the modifications had the effect of changing the meanings of the definitions in ways that were not intended by the authors. Applicant maintains that the dictionary definition does not support Examiner’s rejection of claim 5.

Although Applicant disagrees with Examiner’s reasoning, claim 5 has been amended to state that “the scan window comprises a cross-linked hydrogel and a support structure comprising *a mesh of fibers embedded in the cross-linked hydrogel*” in order to clarify the differences between the claimed invention and the Paton reference. Examiner is respectfully requested to withdraw the rejection of claim 5.

Regarding claim 9, Examiner states that Paton discloses “means for adjusting a distance between said scan window and the transducer to allow adjustment of a position of said scan window with respect to a focus of the transducer.” However, Applicant submits that this is erroneous. Column 1, lines 11-18 of Paton directly contradict Examiner’s statement:

It is to be noted that the probe 3 is arranged to oscillate about the centre point of the face 6. This is primarily determined by the arcuate track provided by the guide grooves 10 whose curvature is centred on the centre point of the face 6. To ensure clearance between the crank 12 and the guide 40, the latter is provided with an arcuate upper surface whose curvature corresponds to that of the grooves 10 in order that the ball race runs in the guide 40 at a substantially constant depth (the centre of the ball

race is substantially equidistant from the centre point of the face 6 at all times).

Contrary to Examiner's assertions, the configuration of the oscillating mechanism ensures that the face 6 of the ultrasonic transducer probe 3 remains a constant distance from the membrane 16 at all times. No means for adjusting this distance is disclosed.

Examiner's modification of FIG. 6 from the Paton reference does not support the rejection of claim 9. Although the edges of the transducer might move toward or away from the scan window when it oscillates, this does not amount to adjusting the distance between the scan window and the transducer. The transducer cannot be tilted to one side to make it "closer" to the scan window, as Examiner seems to suggest, because the transducer must oscillate during imaging. Because the transducer must oscillate, only the position of the center of the transducer is material to the claim and the distance between the center of the transducer and the scan window is constant, as explicitly stated by Paton.

Furthermore, Examiner is not considering the full language of claim 9, which states "means for adjusting a distance between said scan window and the transducer to allow adjustment of a position of said scan window *with respect to a focus of the transducer.*" Although the edges of the transducer in Paton might move toward or away from the scan window when it oscillates, the arcuate geometry of the guide grooves 10 assures that the position of the *focus of the transducer* remains the same with respect to the scan window. Examiner is respectfully requested to withdraw the rejection of claim 9.

Regarding claim 11, although Applicant disagrees with Examiner's reasoning, claim 11 has been amended to state that "a distal surface of said scan window has a *preformed* concave curve" in order to clarify the differences between the claimed invention and the Hayakawa reference, which does not have a preformed concave curve. Examiner is respectfully requested to withdraw the rejection of claim 11.

Regarding claim 12, Examiner is not considering the full language of the claim, which states “wherein the reservoir comprises a plurality of separate pieces *between which said scan window is mechanically secured.*”

Contrary to Examiner’s assertions, Paton only teaches that the window portion of the housing is a subassembly removable from the remainder of the housing along line 101 by loosening the Allen screws 100 shown in FIG. 1. (See column 2, line 61 - column 3, line 1.) The scan window cannot be said to be mechanically secured between the Allen screws, as asserted by Examiner. Nowhere does Paton disclose a reservoir made from a plurality of separate pieces *between which the scan window is mechanically secured.* Examiner is respectfully requested to withdraw the rejection of claim 12.

Regarding claim 13, Examiner cited element 64 in FIG. 3G of Hayakawa as showing delivery of fluid acoustic coupling material to a distal surface of the scan window, however this is in error. Element 64 refers to the ultrasonic coupler itself and not to any means for delivery of fluid acoustic coupling material to a distal surface of the scan window. In fact, element 64 does not even indicate the distal surface of the device. Examiner’s rejection is without basis. Examiner is respectfully requested to withdraw the rejection of claim 13.

3. Claims 2, 15 and 18 were rejected under 35 USC 103(a) as being unpatentable over Paton et al. (US 4,120,291) in view of Hayakawa et al. (US 5,575,291) and further in view of Katsumata (US 5,078,149).
4. Applicant respectfully traverses the rejection of claims 2, 15 and 18 under 35 USC 103(a) for the reasons stated above in connection with claim 1. As stated above, it would not be obvious to combine the Paton and Hayakawa references as suggested by the Examiner and, even if combined, the combination would not result in Applicant’s claimed invention because the suggested combination would be nonfunctional.  
Katsumata’s teaching of an ultrasonic coupling made of a polymeric gel that can be

simultaneously crosslinked and sterilized by exposure to radiation does nothing to remedy the deficiencies of the proposed combination of references. Therefore, claims 2 and 18 are submitted as being patentable over the combination of Paton, Hayakawa and Katsumata under 35 USC 103(a).

Regarding claim 15, none of the cited references disclose the claimed feature “wherein the device incorporates access for surgical instruments.” Consequently, no possible combination of the references could result in Applicant’s claimed invention. Therefore, claim 15 is submitted as being patentable over the combination of Paton, Hayakawa and Katsumata under 35 USC 103(a).

5. Claim 8 was rejected under 35 USC 103(a) as being unpatentable over Paton et al. (US 4,120,291) in view of Hayakawa et al. (US 5,575,291) and further in view of Matthews (US 3,939,123).

Regarding claim 8, Applicant stands corrected on one minor point. Applicant should have stated more clearly that Matthews relates to absorbent materials *as a replacement for* prior art fibrous materials for use as absorbents for moisture. (See column 1, lines 8-23.) However, Applicant still maintains that the disclosed application of the materials for absorption of moisture is not analogous to the present application, which relates to the construction of an ultrasonic coupling for use in ultrasonic imaging during eye surgery. Thus, one of ordinary skill in the art would not look to Matthews for solutions to problems encountered in ultrasonic imaging for eye surgery.

Furthermore, one of ordinary skill in the art would not look to Matthews because the disclosure is not enabling for any materials that would be suitable for use as a scan window for containing a fluid acoustic coupling medium within a reservoir. Without meaning any disrespect to the inventor Matthews, the patent specification is a list of haphazard experiments, some of which were successful and some of which were not, for the intended application of the materials for use as absorbents for moisture. In some



experiments, the polymer was insufficiently crosslinked, in others the polymer was end capped instead of crosslinked. In most of the experiments, the resulting material was highly soluble in water, making it unsuitable even as an absorbent material. The Matthews referenced is barely enabling for materials suitable for use in absorbent products, such as diapers and catamenials, however it is not at all enabling for materials that would be suitable for use as an ultrasound scan window. None of the materials disclosed by Matthews is suitable for use as a scan window for an ultrasonic imaging device without undue experimentation. Thus, one of ordinary skill in the art would not look to Matthews for solutions for a scan window for an ultrasonic imaging device.

Given that the material disclosed by Matthews is unsuitable for use as a scan window in an ultrasonic coupling, it was clearly only with the hindsight provided by Applicant's disclosure that Examiner found this reference to be relevant to Applicant's claims at all. Examiner must have found the reference using a word search for the claim limitations, but only came up with a reference that is both nonanalogous and unsuitable for use in the claimed invention.

For all of these reasons, claim 8 is submitted as being patentable over the combination of Paton, Hayakawa and Matthews under 35 USC 103(a).

6. Claims 10 and 14 were rejected under 35 USC 103(a) as being unpatentable over Paton et al. (US 4,120,291) in view of Hayakawa et al. (US 5,575,291) and further in view of Puech (US 6,837,855).
7. Applicant respectfully traverses the rejection of claims 10 and 14 under 35 USC 103(a) for the reasons stated above in connection with claim 1. As stated above, it would not be obvious to combine the Paton and Hayakawa references as suggested by the Examiner and, even if combined, the combination would not result in Applicant's claimed invention because the suggested combination would be nonfunctional. Puech's disclosure contains nothing that would remedy the deficiencies of the proposed

combination of references.

Furthermore, regarding claim 10, neither Paton, Hayakawa nor Puech discloses “means for adjusting a distance between said scan window and the transducer to allow adjustment of a position of said scan window with respect to a focus of the transducer” as recited in claim 9, from which claim 10 depends. Consequently, no possible combination of the references could result in Applicant’s claimed invention. Moreover, there is no overlap between the claimed range of 2 to 6 mm and the range of focal lengths disclosed by Puech. (See MPEP 2144.05 Obviousness of Ranges.) The section of the Puech reference cited by Examiner (column 6, lines 38-48) discloses two specific transducers with focal lengths of 7.5 mm and 12.5 mm. As there is no overlap with the claimed range of 2 to 6 mm, claim 10 is submitted as being patentable over the combination of Paton, Hayakawa and Puech under 35 USC 103(a).

8. Claims 15-17 were rejected under 35 USC 103(a) as being unpatentable over Paton et al. (US 4,120,291) in view of Hayakawa et al. (US 5,575,291) and further in view of de Juan et al. (US 2001/0029335).
9. Applicant respectfully traverses the rejection of claims 16 and 17 under 35 USC 103(a) for the reasons stated above in connection with claim 1. As stated above, it would not be obvious to combine the Paton and Hayakawa references as suggested by the Examiner and, even if combined, the combination would not result in Applicant’s claimed invention because the suggested combination would be nonfunctional. The disclosure of de Juan contains nothing that would remedy the deficiencies of the proposed combination of references. Therefore, claims 15-17 are submitted as being patentable over the combination of Paton, Hayakawa and de Juan under 35 USC 103(a).

## RESPONSE TO EXAMINER'S ARGUMENTS

In the previously filed response, Applicant stated that it would entail a change in the working principles of the Hayakawa invention to use the gel material as a window to enclose a fluid coupling material for ultrasonic imaging. In Hayakawa, the gel material itself is the coupling material, no coupling fluid is required, therefore there would be no motivation to modify the reference as suggested by the Examiner. See MPEP 2143.01(VI):

### VI. THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)

Examiner countered that the combination of references in the rejection was permissible because the working principle of Paton, the primary reference, was not being changed.

However, Applicant still maintains that the combination of Paton and Hayakawa is not proper and thus does not constitute a *prima facie* case for obviousness of the claims under 35 USC 103. In the published decision of *In re Ratti*, the court made no distinction between primary and secondary references; it only stated that the proposed combination cannot change the principle of operation ***of the prior art invention being modified***. In the present case, Examiner's suggested combination requires material and radical modifications to the gel material coupling device of Hayakawa, including the principle of operation of the coupling device, before it could be used as a replacement for the scan window in the Paton reference. Thus, the prohibition against changing the principle of operation of the prior art invention being modified from *In re Ratti* does apply even though Hayakawa is the "secondary reference."

Furthermore, there is a long line of other court decisions supporting the principle that material and radical modifications of the cited references by the Examiner in order to put together a rejection under 35 USC 103 is not permissible.

*In re* Application of Lee 193 F.2d 186:

The Solicitor for the Patent Office has correctly pointed out in his brief, and cited authority to the effect, that it is not necessary in order to make a valid combination of references to prove that a part of one device may be physically inserted into another, where the cited references suggest the modification in such a way that any person skilled in the art could make it.<sup>2</sup> On the other hand, appellant cites authority of this court,<sup>3</sup> and of the Board of Appeals of the Patent Office,<sup>4</sup> to the effect that a basic reference and additional references having features somewhat analogous to those disclosed by appealed claims, which require material and radical modification in order to conform to appellant's claims, are not valid references unless they show an equivalent and operative combination which obviously could be substituted to meet the appealed claims by any skilled mechanic.

On the other hand, considerable latitude has been allowed the applicant for a patent in determining what is necessary for the full protection of his patent rights, and in the case of claims for a combination, where the individual features of the combination can be met only by unusual modification of features found in the prior art, thereby causing doubt on the question of patentability, courts have been accustomed to resolve such doubts in favor of the applicant. *In re Pappas et al.*, 38 C.C.P.A., Patents, 746, 758, 185 F.2d 695.

2. *In re Ewald*, 26 C.C.P.A., Patents, 1312, 104 F.2d 622; *In re Merkle*, 32 C.C.P.A., Patents, 1151, 150 F.2d 445; *In re Stover*, 32 C.C.P.A., Patents, 823, 146 F.2d 299.

3. *In re Joseph Dawe*, 19 C.C.P.A., Patents, 728, 53 F.2d 543; *In re Arter*, 32 C.C.P.A., Patents, 882, 147 F.2d 701.

4. *Ex parte Williams*, 51 U.S.P.Q. 92, 93.

*In re* Application of Hans O Irmscher 262 F.2d 85:

"The Solicitor for the Patent Office has correctly pointed out in his brief, and cited authority to the effect, that it is not necessary in order to make a valid combination of references to prove that a part of one device may be physically inserted into another, where the cited references suggest the modification in such a way that any person skilled in the art could make it. \*

\* \* On the other hand, appellant cites authority of this court, \* \* \* and of the Board of Appeals of the Patent Office, \* \* \* to the effect that a basic reference and additional references having features somewhat analogous to those disclosed by appealed claims, which require material and radical modification in order to conform to appellant's claims, are not valid references unless they show an equivalent and operative combination which obviously could be substituted to meet the appealed claims by any skilled mechanic."

This principle has been followed by this court in *In re Demarche*, 219 F.2d 952, 42 C.C.P.A., Patents, 793; *In re Shaffer*, 229 F.2d 476, 43 C.C.P.A., Patents, 758.

Applicant submits that material and radical changes would be required to the gel material coupling device of Hayakawa before it could be used as a replacement for the scan window in the Paton reference (as well as additional inventive activity because the suggested combination is not enabled by the references, as stated above.) Thus, Examiner has not established a *prima facie* case for obviousness of the claims under 35 USC 103. Examiner is respectfully requested to withdraw all rejections based on this combination.

## SECONDARY CONSIDERATIONS

MPEP 2141 states:

Objective evidence relevant to the issue of obviousness must be evaluated by Office personnel. *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 467. Such evidence, sometimes referred to as "secondary considerations," may include evidence of commercial success, long-felt but unsolved needs, failure of others, and unexpected results. The evidence may be included in the specification as filed, accompany the application on filing, or be provided in a timely manner at some other point during the prosecution.

As evidence of secondary considerations, Applicant submits herewith a copy of **REVIEW OF OPHTHALMOLOGY**, Vol. No: 13:11, Issue: 11/1/2006, Breaking New Ground In Ultrasound, marked as Exhibit C.

The section of the article entitled Enclosing a High-Frequency Probe shows strong evidence of long-felt but unsolved needs and failure of others to solve the problem addressed by Applicant's claimed invention.

According to the article, multiple manufacturers of ultrasound imaging system have tried to produce a "self-contained" high frequency ultrasound probe. Enclosed low frequency ultrasound probes (such as described in the Paton reference, US 4,120,291) have been available on the market for some time, however more difficult problems are encountered when trying to enclose a high frequency ultrasound probe. Previous efforts by others have resulted in an unacceptable deterioration of image quality.

Barry Durante, executive vice president of Sonomed is quoted as saying, "However, it is a trade-off. If you have nothing between the probe and the eye except fluid, you get exceptionally good resolution and image quality. Putting a membrane between the transducer and the object of interest usually undermines that quality. Plus, the sound waves

pass through it twice—once to get to the object, and once coming back. And since higher frequencies don't penetrate as far, UBM quality is more affected than low-frequency scans.

“So, if you want to use a self-contained UBM probe, you have to select your materials very carefully or you'll lose too much of the ultrasound energy. We're currently looking for materials that can be used to enclose the high-frequency probe without any deterioration of the image, and we're testing possibilities. Other companies have come out with alternatives, but the proof of the pudding is in the image. If you have an image that's as good as with the water bath, then you have something. Right now, there's room for improvement.”

Mr. Durante says Sonomed would like to have something new along these lines for the Academy meeting in November, but can't say for sure whether they'll be ready by then. “We want to be user-friendly,” he says, but it's a compromise. We prefer to err on the side of image quality.”

Similarly, Richard Weitz, president of Ophthalmic Technologies, is quoted as saying, “An enclosed probe has several disadvantages, primarily that the membrane absorbs sound. Also, the membrane must fit nicely around the cornea or limbal interface. If the technician has to fill the enclosure, you can get bubbles or leakage. And an inexperienced person can scratch the cornea. In fact, I wouldn't sell this probe tip to an inexperienced person.” He notes that OTI is working on finding a material for the membrane that absorbs less sound than water, but so far, that goal remains elusive.

Mike Austin, vice president of sales and marketing at Paradigm Medical Industries is quoted as saying, “We're using the same film we've always used. It's durable, but it's very thin. In the scans you can see the membrane, but we've had no complaints because the doctors know what it is.”

This article was published nearly two years after Applicant's filing date and, of the three manufacturers mentioned in the article, two had not yet solved the problem of producing an enclosed high frequency ultrasound imaging probe and the third merely uses a prior art solution and accepts the compromise in image quality. This is submitted as very strong evidence in support of the patentability of the currently pending claims.



## CONCLUSION

For all the reasons above, Applicant submits that the claims all define novel subject matter that is nonobvious. Therefore, allowance of these claims is submitted to be proper and is respectfully requested.

Applicant invites the Examiner to contact Applicant's representative as listed below for a telephonic interview if so doing would expedite the prosecution of the application.

Very respectfully submitted,

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